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(56) Documents cited
GB 0191923 A **GB 0166280 A** **GB 0151291 A**
EP 0250655 A1

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(54) Carrying device

(57) A readily detachable carrying device for a portable apparatus such as a mobile telephone 3, comprises carrying means such as a wrist strap 1 and/or belt clip 2 integrally formed with a string retaining member for receiving and releasably retaining the end portions of an attachment string 5. The device is attached to the portable apparatus by passing a free end of the attachment string through a fixing ring 9 located on the portable apparatus and retaining the free end in the retaining member by inserting it into a tapered slot 4.

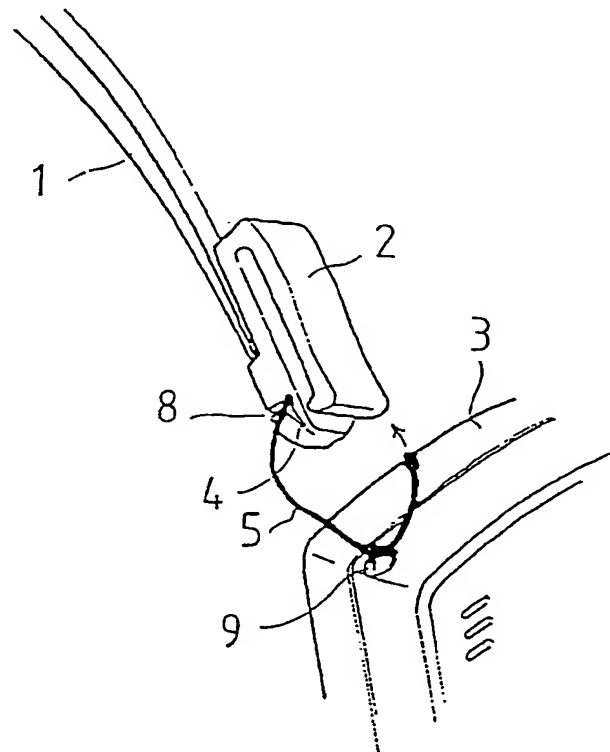
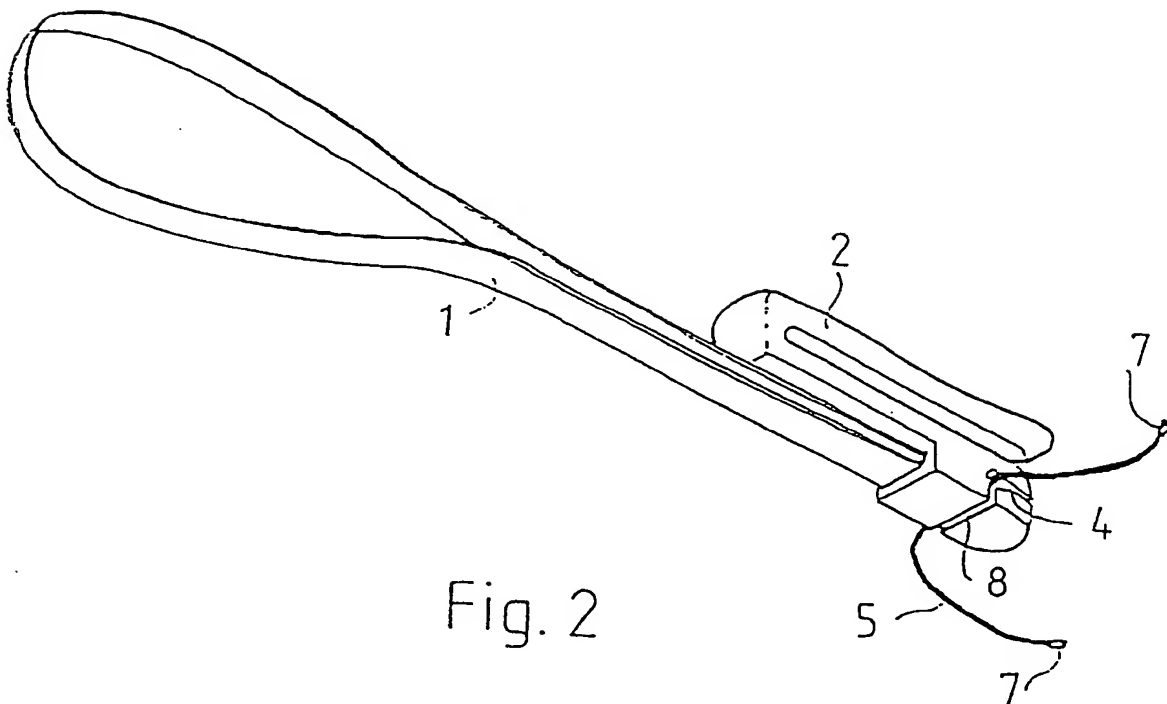
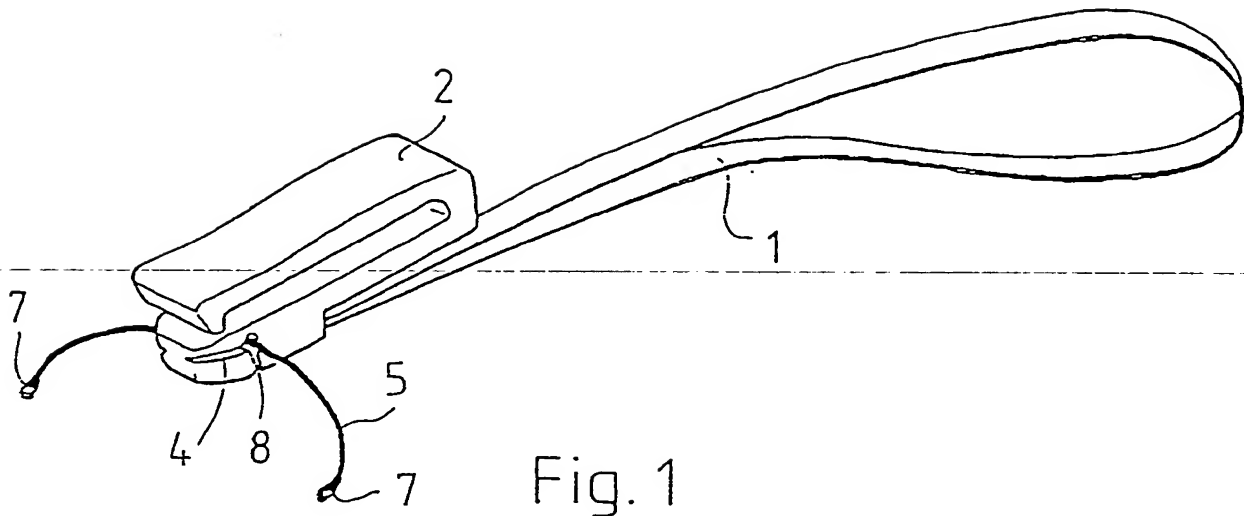


Fig. 3

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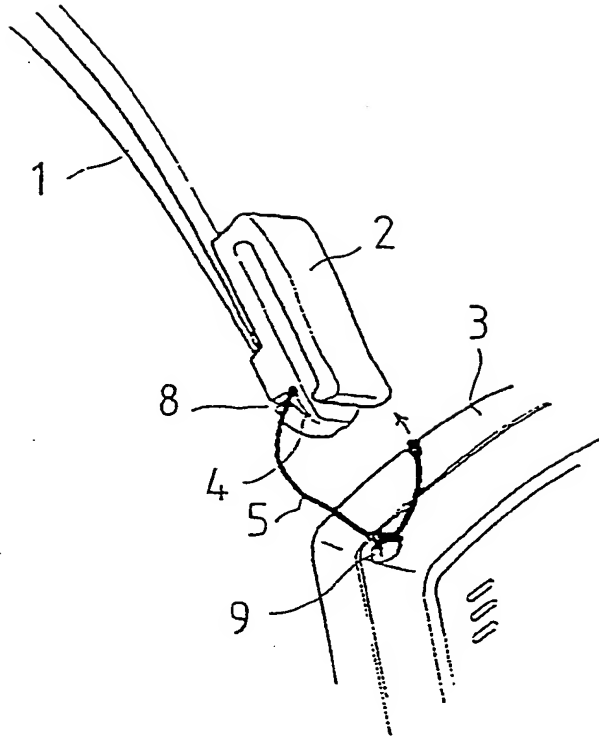


Fig. 3

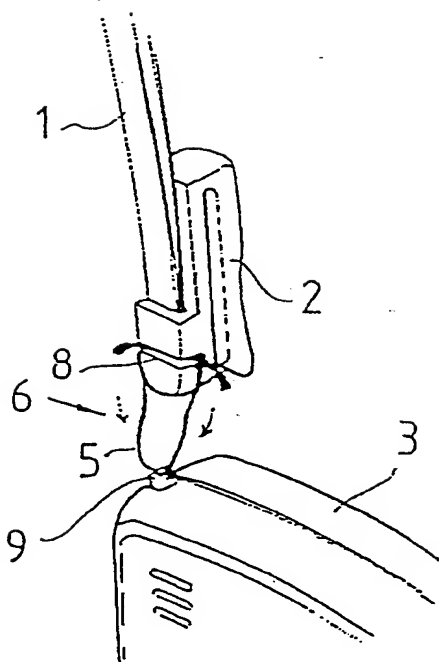


Fig. 4

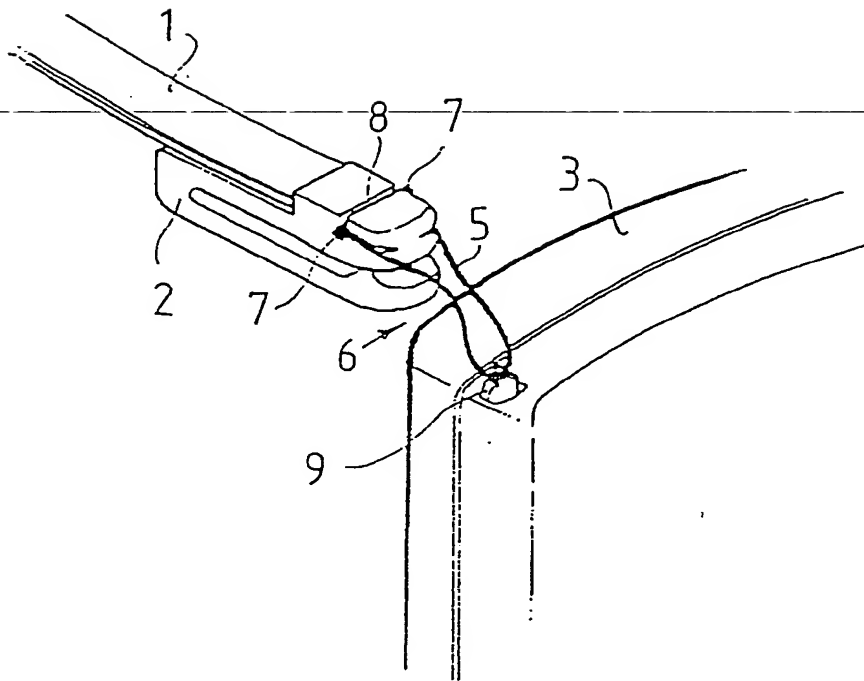


Fig. 5

Carrying Device

This invention relates to a detachable carrying device for a portable apparatus. In particular, it relates to a carrying device comprising a wrist strap, belt clip or the like which is readily attachable to the portable apparatus.

Heretofore it has been known to secure wrist straps, belt clips or the like to portable apparatus by means of snap rings, or by passing a portion of the wrist strap, belt clamp or the like through a fixing ring provided on the portable apparatus. A known type of wrist strap consists of a double loop arrangement in which a first loop is passed through the fixing ring. The second loop is then passed through the first loop, thereby attaching the wrist strap to the fixing ring.

However, the foregoing known carrying devices are not entirely satisfactory and have a number of problems or disadvantages associated with them. In particular, known carrying devices tend to be difficult and awkward to manipulate, which results in their use being slow and unreliable.

The foregoing problems and disadvantages are addressed by the present invention which provides a detachable carrying device for a portable apparatus comprising carrying means, an attachment string having two end portions, and a retaining member having means for receiving and

releasably retaining end portions of the attachment string whereby the attachment string may be configured into the form of a closed loop for attachment to the portable apparatus.

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An advantage of the invention is that the end portions of the attachment string are relatively easily inserted into and removed from the retaining member. This results in a short time having to be spent in attaching the attachment string to the retaining member.

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Preferably, the means for receiving and releasably retaining the end portions of the attachment string is a tapered slot.

Such an arrangement has the advantage that a tapered slot is relatively simple to incorporate into the retaining member.

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Suitably, there is provided a slot arranged to extend in a transverse direction from the tapered slot. Such a transverse slot facilitates reception and removal of the attachment string to and from the tapered slot.

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The attachment string may be provided with enlarged end portions to inhibit the attachment string from moving out of the slot in a direction transverse to the longitudinal axis of the tapered slot. Thus the attachment string is inhibited from moving out of the slot even when tensile forces are applied

substantially along the axis of the attachment string.

It is particularly convenient to have the retaining member integral with the carrying means. This has the advantage that such an arrangement is particularly convenient for a user because there are less separate parts to the carrying device which means that the device is less cumbersome to use and there are less parts to mislay.

Advantageously, the attachment string may be inhibited from coming out of the slot by urging it towards the narrow end of the tapered slot by a force applied to a part of the attachment string external to the tapered slot. When the carrying device is in use the force is likely to be provided by the weight of a portable apparatus attached to the carrying apparatus by the attachment string.

A specific embodiment of the invention is hereinafter described, by way of example, with reference to the accompanying drawings in which:

Figure 1 and Figure 2 show an attachment string partially inserted into a tapered slot;

Figure 3 shows an attachment string passing through a fixing ring located on a portable apparatus;

Figure 4 shows the direction in which an attachment string is moved in order to retain it in a tapered slot; and

Figure 5 shows an attachment string which passes through a fixing ring of a portable apparatus and is retained in a tapered slot.

Figures 1 and 2 show a detachable carrying apparatus having a tapered slot 4 which has an access slot 8 transverse thereto. The carrying device is combined with a belt clip 2 and a wrist strap 1. Figures 1 and 2 also show an attachment string inserted in the access slot 8 and located at an open end of the tapered slot 4. The string 5 is shown as having enlarged end portions 7 which serve to inhibit the string 5 from sliding out of the tapered slot 4 in a direction transverse to the longitudinal axis of the tapered slot 4 when the string 5 is inserted in the tapered slot 4.

Figure 3 shows how a portable apparatus 3, such as a radio telephone is attached to the carrying apparatus. One end portion of string 5 is placed in the tapered slot 4 such that a corresponding enlarged end of the string 5 protrudes out of one side of the tapered slot, with the rest of the end portion located in the tapered slot 4. The free end of the string is then passed through a fixing ring 9 which is located on the portable apparatus 3. The free end of string 5 is then placed in tapered slot 4 via access slot 8 as shown in Figure 4. Then, a tensile force is placed on the string 5 by

pulling the carrying device away from the portable apparatus or vice versa, or a combination of such actions. This has the effect of causing the string to be urged towards the narrow end of the tapered slot 4. This ensures a tight fit of the string in the tapered slot 4 and provides a secure method of attaching the portable apparatus to the carrying device.

When the carrying device is in use it is usual for the portable apparatus to hang down from or below the carrying device. Thus, there is a substantially continuous tensile force on the string which acts to urge it further towards the narrow end of the tapered slot 4. This ensures that the portable apparatus 3 is reliably attached to the carrying device via string 5 when the carrying device is being held, either by a wrist strap 1, a belt-clip 2 or by itself. When there is no tensile force or the tensile force is decreased, the string is retained in the tapered slot 4 by frictional forces between the string 5 and the inner sides of the tapered slot 4. Thus, release of the string 5 is inhibited if the portable apparatus 3 is supported by something other than the carrying device, e.g. by laying the portable apparatus 3 on a table etc, or if the portable apparatus 3 is bounced up and down due to a user's movements. Of course, if the bouncing up and down is sufficiently violent to produce a tensile force in the open direction of the tapered slot 4 which is sufficient to overcome the frictional forces then the string 5 would be released from the tapered slot 4. However, such violent movements would not usually occur and in general use the carrying device

would provide a reliable and secure way of attaching a portable apparatus 3 thereto.

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In order to release the string 5 from the tapered slot 4, the string 5 must be moved towards the open end of the tapered slot 4 as shown in Figure 5. Then the string 5 can be removed from the carrying device via the access slot 8. Once at least one end of the string 5 has been released from the carrying device, it can be passed through the fixing ring 9 to release the portable apparatus 3 from the carrying device and string 5.

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Another way of using the carrying device would be to retain only one end of an attachment string in the tapered slot. The free end of the attachment string 5 can then be attached to a portable apparatus by suitable means such as a tapered slot.

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In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention.

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The scope of the present disclosure includes any novel feature or combination of novel features disclosed therein either explicitly or implicitly or any generalisation thereof irrespective of whether or not it relates to the claimed invention or mitigates any or all of the technical problems

addressed by the present invention. The applicant hereby gives notice that new claims may be formulated to such features during the prosecution of this application or of any such further application derived therefrom.

Claims

1. A detachable carrying device for a portable apparatus comprising;

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carrying means,

an attachment string having two end portions, and

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a retaining member having means for receiving and releasably retaining end portions of the attachment string whereby the attachment string may be configured into the form of a closed loop for attachment to the portable apparatus.

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2. A device as claimed in claim 1, wherein the means for receiving and releasably retaining the end portions of the attachment string is a tapered slot.

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3. A device as claimed in claim 2, wherein there is provided a slot arranged to extend in a transverse direction from the tapered slot.

4. A device as claimed in any of claims 2 to 3, wherein the attachment string has enlarged end portions to inhibit the attachment string

from moving out of the slot in a direction transverse to the longitudinal axis of the tapered slot.

5. A device as claimed in any preceding claim, wherein the retaining member is integral with the carrying means.

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6. A device as claimed in any of claims 2 to 5, wherein the attachment string is urged towards the narrow end of the tapered slot by a force applied to part of the attachment string external to the tapered slot.

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7. A device as claimed in any preceding claim, wherein the carrying means is a strap.

8. A device as claimed in any preceding claim, wherein the carrying means is a clip means.

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9. A portable apparatus including a fixing ring wherein a portion of the attachment string of a carrying device as claimed in any preceding claim passes through the fixing ring.

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10. A device as claimed in any preceding claim, wherein the portable apparatus is a portable telephone.

11. A detachable carrying device substantially as hereinbefore described and with reference to the drawings.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

-11 -
Application number

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Relevant Technical fields

(i) UK Cl (Edition L) A4G E2A (AGRC)

(ii) Int Cl (Edition 5) A45F 5/10

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

G NICHOLLS

Date of Search

27 MAY 1993

Documents considered relevant following a search in respect of claims

1-11

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
X	GB 191923	(HOLLYER) see especially Figure 5	1, 5
X	GB 166280	(HOLLYER) see especially Figure 4	1, 5
X	GB 151291	(GARDER) see especially page 2 lines 110-121	1, 5
X	EP 0250655 A1	(GRONDAHL) see particularly column 1 lines 49-53	1, 2, 5

SF2(p)

1WL - doc99\fil000557

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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